# CPSC 304 Project Cover Page

M	iles	tone	#:	4

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Group Number: 131

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

# Milestone 4

# **Project Description**

Our project is a pet shelter management application. The project allows users to efficiently manage all areas of a pet shelter, including the adoption and care of animals, appointments, staff management, social media, event planning, and inventory management. This application utilizes the Oracle database management system to manage relationships between animals, adopters, employees and volunteers and facilitate a smooth and efficient adoption experience for everyone involved.

In the implementation, the app allows users to add, remove and update animals in the database. Our team's user-friendly interface simplifies adding new entries, removing outdated information, and updating existing details, ensuring the database remains accurate and comprehensive. The application provides valuable search capabilities, enabling users to locate a particular caretaker using criteria such as name, ID, or address. Additionally, users can identify all customers who have contributed donations surpassing a specified amount and determine the current count of animals belonging to a specific type within the pet shelter.

# **Schema Differences**

We have had to make some changes to the schema and SQL table creations and insertions once we began implementing our project. We have had to combine each date and time attribute within the same relation since Oracle does not have distinct types for them, so it didn't make sense to keep them separated. We also changed the constraint syntax since we were getting errors when we wrote the create table statements as we were taught in class. Additionally, we were missing many ON DELETE CASCADE clauses.

- Every instance of VARCHAR changed to VARCHAR2() with a specified character limit as appropriate.
- Every relation with an ID attribute is now GENERATED ALWAYS AS IDENTITY.
- eventDayTime as a single attribute in FundraiserEvent as opposed to eventDate in Fundraiser and another relation FundraiserEventDate with eventDate and eventTime.
   eventDayTime is UNIQUE.
- vetDayTime as a single attribute in VetAppointment as opposed to vetDate and vetTime.
   vetDayTime now is the only attribute in the primary key.
- Adopter references Customer, added ON DELETE CASCADE.
- Animal now has arrivalDate instead of timeInShelter as it didn't make sense to have to regularly update every animal record. arrivalDate is NOT NULL.
- VetAppointment references Animal, added ON DELETE CASCADE.

- Worker references AnimalCaretaker, added ON DELETE CASCADE.
- Volunteer references AnimalCaretaker, added ON DELETE CASCADE.
- In Post added postingDate NOT NULL.
- AdoptionDetails references petID, added ON DELETE CASCADE.
- PetAdopter references Animal, added ON DELETE CASCADE.
- Appointment references Animal, added ON DELETE CASCADE.
- Appointment references Customer, added ON DELETE CASCADE.

# Final Schema + Data Present

FundraiserEvent(**eventID**, eventType, eventDayTime, donationGoal);

AnimalCaretaker(**caretakerID**, caretakerName, <u>fundEventID</u>, caretakerAddress, caretakerPostalCode);

Customer(customerID, customerName);

 $Adopter(\underline{adopterID}, numOfAdoptions, safeOwnerRating, adopterPostalCode, adopterAddress);\\$ 

Animal(**petID**, animalName, type, age, favouriteCaretaker, previousOwner, arrivalDate, adopterID);

VetAppointment(vetDayTime, vetLicenselD, petID);

Worker(workerID, hourlyPay);

Volunteer(volunteerID, hoursVolunteered);

Post(**postID**, postType, description, postingDate, <u>caretakerID</u>);

AdoptionDetails(adoptionID, petID, adopterID, caretakerID, adoptionDate, notes);

PetAdopter(**petID**, adopterID):

Appointment(**petID**, **caretakerID**, **customerID**, apptDayTime);

Donation(customerID, caretakerID, amount);

Item(itemID, itemName, quantity);

ItemPurchase(<u>customerID</u>, <u>caretakerID</u>, <u>itemID</u>);

Vet(vetLicenselD, vetName);

AnimalCaretakerPC(caretakerPostalCode, caretakerCity);

PostDateAndType(**postingDate**, postType);

AdopterPC(adopterPostalCode, adopterCity);

ItemPrice(itemID, total);

#### **FundraiserEvent**

[SQL> select * from fundraiserevent;							
EVENTID EVENTTYPE	EVENTDAYT	DONATIONGOAL					
1 Charity Auction 2 Pet Walkathon 3 Adoption Fair 4 Pet Costume Contest 5 Animal Rescue Gala	01-NOV-23 15-NOV-23 30-NOV-23 10-DEC-23 25-DEC-23	5000 3000 2000 2500 7000					

#### **AnimalCaretaker**

CARETAKERID CARETAKERNAME	FUNDEVENTID CARETAKERADDRESS	CARETAKE
1 John Peters 2 Mary Johnson 3 David Perks 4 Elaine Brown 5 Michael Wilson 6 Emily Anderson	1 123 Main St 2 456 Elm St 3 789 Oak St 4 101 Pine St 5 234 Maple St 123 Oak Lane	12345 67890 34567 87654 43210 12345
7 Chris Martinez 8 Jasmine Walker 9 Ryan Turner 10 Morgan Foster	789 Pine St 101 Maple St 201 Cedar Drive 234 Birch Blvd	43210 34567 43210 67890

#### Customer

# CUSTOMERID CUSTOMERNAME 1 Alice Johnson 2 Bob Smith 3 Carol Davis 4 David Wilson 5 Eve Brown

#### **Adopter**

```
[SQL> select * from adopter;
 ADOPTERID NUMOFADOPTIONS SAFEOWNERRATING ADOPTERP ADOPTERADDRESS
          1
                           2
0
                                            4 12345
                                                         123 Elm St
          2
3
4
                                            3 23456
                                                         456 Oak St
                          1
                                                        789 Pine St
                                            5 34567
                                                        101 Maple St
234 Birch St
                                            4 45678
                           2
          5
                                            4 56789
```

#### Animal

PETID	ANIMALNAME	ТҮРЕ	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERID
1	Fluffy	Cat	 2	3	4	01-NOV-23	1
	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-0CT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
6	Domino	Hamster	1	3	1	23-FEB-22	
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-0CT-23	

#### **VetAppointment**

#### Worker

[SQL> select	* from worker;
WORKERID	HOURLYPAY
1	15
2	17
3	14
4	18
5	16

#### Volunteer

[SQL> select	* from volunteer;
VOLUNTEERID	HOURSVOLUNTEERED
6	20
7	25
8	18
9	30
10	22

**Post** 

[SQL> select * from post;			
POSTID POSTTYPE	DESCRIPTION	POSTINGDA	CARETAKERID
2 News 3 Update 4 Event	Adoption event this weekend! New arrivals in the shelter Vet check-ups for all animals Volunteer appreciation day Adopt a furry friend today	25-0CT-23 26-0CT-23 27-0CT-23 28-0CT-23 29-0CT-23	1 2 3 3

#### **AdoptionDetails**

[SQL> select *	from ado	ptiondetail	ls;	
ADOPTIONID	PETID	ADOPTERID	CARETAKERID	ADOPTIOND
NOTES				
1 friendly cat	1	1		20-0CT-23
2 playful dog	2	2	2	21-0CT-23
3 loud cat	3	3	3	22-0CT-23
ADOPTIONID 				
4 really soft b	4	4	2	23-0CT-23
5 quiet dog	5	5	5	24-0CT-23
6 interesting h	6 amster	5	2	25-0CT-23

#### **PetAdopter**

[SQL>	select	* from	petadopter	;
	PETID	ADOPTER	RID	
			 1	
	2		2	
	3		3	
	4		4	
	5		5	
	6		5	

# **Appointment**

[SQL> select * from appointment;							
PETID	CARETAKERID	CUSTOMERID	APPTDAYTI				
6	2	1	15-JAN-23				
7	2	2	20-FEB-23				
8	3	3	10-MAR-23				
9	4	4	07-APR-23				
10	5	5	12-MAY-23				

#### **Donation**

[SQL> select * from donation;						
CUSTOMERID CARET	AKERID	AMOUNT				
1	1	100				
2	2	150				
3	3	200				
4	4	50				
5	5	75				

#### Item

[SQL> select * from item;	
ITEMID ITEMNAME	QUANTITY
1 Pet Food	100
2 Blankets	50
3 Toys	75
4 Medicine	25
5 Leashes	30

#### **ItemPurchase**

[SQL> select * fro	m itempu	rchase;	
CUSTOMERID CARETA	KERID	ITEMID	
1	1	3	
2	1	5	
3	3	1	
4	5	4	
5	3	5	

Vet

#### **AnimalCaretakerPC**

#### **PostDateAndType**

#### **AdopterPC**

#### **ItemPrice**

from itempr	ice;
TOTAL	
200	
100	
150	
75	
90	
	200 100 150 75

# **SQL Queries + Locations**

#### **INSERT**

Location: database\_and\_queries.php lines 132 to 212

#### **DELETE**

Location: database\_and\_queries.php lines 214 to 241

#### **UPDATE**

Location: database\_and\_queries.php lines 243 to 310

#### **Selection**

Location: database\_and\_queries.php lines 382 to 450

#### **Projection**

Location: database\_and\_queries.php lines 500 to 560

#### Join

Location: database\_and\_queries.php lines 464 to 498

#### **Aggregation with Group By**

Location: database\_and\_queries.php lines 563 to 593

#### **Aggregation with Having**

Location: database\_and\_queries.php lines 595 to 628

#### **Nested Aggregation with Group By**

Location: database\_and\_queries.php lines 630 to 660

#### **Division**

Location: database\_and\_queries.php lines 663 to 688

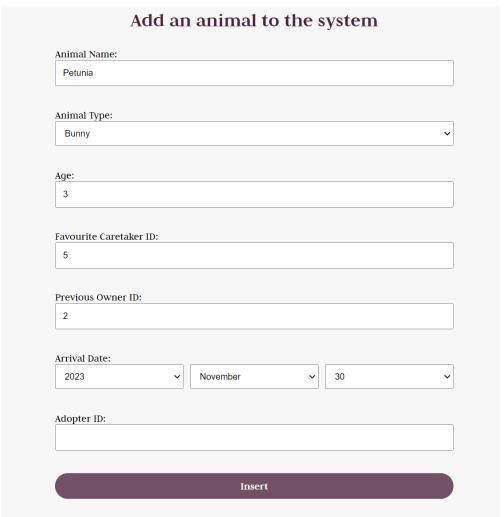
# **Query Screenshots**

#### **INSERT**

Table from sqlplus before query:



Gui for the insert query:



## *Table after the query is executed:*

	Animal Table								
Pet ID	Animal Name	Animal Type	Animal Age	Favourite Caretaker ID	Previous Owner	Arrival Date	Adopter ID		
11	Petunia	bunny	3	5	2	30-NOV-23			
1	Fluffy	Cat	2	3	4	01-NOV-23	1		
2	Rex	Dog	3	1	4	11-MAR-23	2		
3	Whiskers	Cat	5	2	5	02-JAN-22	3		
4	Buddy	Bunny	4	4	3	14-OCT-20	4		
5	Luna	Dog	1	3	1	06-JUN-23	5		
6	Domino	Hamster	1	3	1	23-FEB-22			
7	Patch	Dog	2	5	4	07-APR-23			
8	Pirate	Cat	2	4	4	11-MAY-21			
9	Cloudy	Bunny	3	2		11-NOV-23			
10	Smoothie	Bunny	3	2		31-OCT-23			

# **DELETE**

Table from sqlplus before delete query is executed:

PETID	ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERID
1	Fluffy		2	3	4	01-NOV-23	1
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-0CT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
6	Domino	Hamster	1	3	1	23-FEB-22	
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-0CT-23	

Delete query in the GUI:

# Remove an animal from the system Pet ID: 6 Delete

Table after the delete query is executed:

## **Animal Table**

Pet ID	Animal Name	Animal Type	Animal Age	Favourite Caretaker ID	Previous Owner	Arrival Date	Adopter ID
1	Fluffy	Cat	2	3	4	01-NOV-23	1
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-OCT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-OCT-23	

#### **UPDATE**

Table from sqlplus before update query is executed:

TID ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERID
 1 Fluffy	 Cat	2	3	4	01-NOV-23	1
2 Rex	Dog	3	1	4	11-MAR-23	2
3 Whiskers	Cat	5	2	5	02-JAN-22	3
4 Buddy	Bunny	4	4	3	14-0CT-20	4
5 Luna	Dog	1	3	1	06-JUN-23	5
6 Domino	Hamster	1	3	1	23-FEB-22	
7 Patch	Dog	2	5	4	07-APR-23	
8 Pirate	Cat	2	4	4	11-MAY-21	
9 Cloudy	Bunny	3	2		11-NOV-23	
10 Smoothie	Bunny	3	2		31-0CT-23	

# Update query in the GUI:

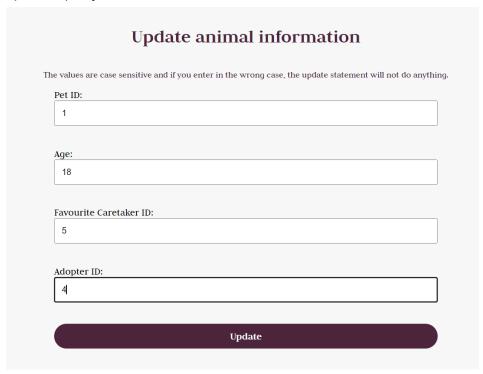


Table after the update query is executed:

Animal	ไล	h	e

Pet ID	Animal Name	Animal Type	Animal Age	Favourite Caretaker ID	Previous Owner	Arrival Date	Adopter ID
1	Fluffy	Cat	18	5	4	01-NOV-23	4
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-OCT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
6	Domino	Hamster	1	3	1	23-FEB-22	
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-OCT-23	

# Selection

Table from sqlplus before the selection query is executed:

ARETAKERID	CARETAKERNAME	FUNDEVENTID	CARETA	AKERADDRESS	CARETAKE
1	John Peters	1	123 Ma	 ain St	12345
2	Mary Johnson	2	456 El	lm St	67890
3	David Perks	3	789 Oa	ak St	34567
4	Elaine Brown	4	101 Pi	ine St	87654
5	Michael Wilson	5	234 Ma	aple St	43210
6	Emily Anderson		123 Oa	ak Lane	12345
7	Chris Martinez		789 Pi	ine St	43210
8	Jasmine Walker		101 Ma	aple St	34567
9	Ryan Turner		201 Ce	edar Drive	43210
10	Morgan Foster		234 Bi	irch Blvd	67890

#### Selection query in the GUI:

Caretaker ID:	
1	
Caretaker Name:	
John Peters	
1 Caretaker Address:	
123 Main St	

Results from the query:

Operation successful

Search Results

Caretaker | Caretaker | Fundraiser | Address | Postal | Code |

1 | John Peters | 1 | 123 | Main St | 12345

# **Projection**

Table from sqlplus before the projection query is executed:

SQL> S	SELECT * FROM AN	IMAL;					
PETID	ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERID
1	Fluffy	Cat	2	3	4	01-NOV-23	1
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-0CT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
6	Domino	Hamster	1	3	1	23-FEB-22	
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-0CT-23	

Projection query in the GUI:



Results of the projection query:

**Operation successful** 

#### **Search Results**

petID	animalName	type	arrivalDate
1	Fluffy	Cat	01-NOV-23
2	Rex	Dog	11-MAR-23
3	Whiskers	Cat	02-JAN-22
4	Buddy	Bunny	14-OCT-20
5	Luna	Dog	06-JUN-23
6	Domino	Hamster	23-FEB-22
7	Patch	Dog	07-APR-23
8	Pirate	Cat	11-MAY-21
9	Cloudy	Bunny	11-NOV-23
10	Smoothie	Bunny	31-OCT-23

#### Join

Tables from sqlplus before the join query is executed:



SQL> SELECT * FROM	DONAT:	CON;
CUSTOMERID CARETAK	ERID	AMOUNT
1	1	100
2	2	150
3	3	200
4	4	50
5	5	75

Join query in the GUI:

JOIN: Find customers who made donations above a certain amount

Donation Amount:

80

Submit

Results of the join query:

#### Operation successful

# **Search Results**

#### **Customers with Donations above 80**

Customer Name	Donation Amount
Alice Johnson	100
Bob Smith	150
Carol Davis	200

#### **Aggregation with Group By**

Table from sqlplus before the group by query is executed:



Aggregation with group by query in the GUI:

Aggregation with GROUP BY: Count how many animals of specific type we have in pet shelter

The values are case sensitive and if you enter in the wrong case, the group by query will not be correctly executed.

Reminder: Animal type first letter should be capitalized.

Type of animal:

Cat

Submit

Results of the query:

#### **Operation successful**

#### **Search Results**

Animal Type	TypeCount	
Cat	3	

#### **Aggregation with Having**

Table in sqlplus before the having query is executed:



Aggregation with having query in the GUI:

Aggregation with HAVING: Find fundraiser event types with specified average donation goal or above



Results of the query:

**Operation successful** 

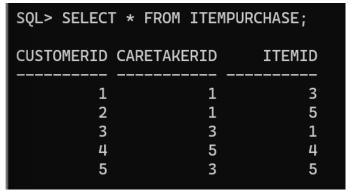
#### **Search Results**

Event Type	Average Donation Amount
Pet Walkathon	3000
Charity Auction	5000
Animal Rescue Gala	7000

**Nested Aggregation with Group By** 

Tables before the nested aggregation with group by query is executed:





Nested aggregation with group by query in the GUI:

Nested Aggregation with GROUP BY: Lists customers that have purchased same or more number of items than the average customers

Submit

Results of the query:

**Operation successful** 

#### **Search Results**

Customer ID	Customer Name	Average Number of Items purchased per Customer
3	Carol Davis	2
2	Bob Smith	2
4	David Wilson	2
1	Alice Johnson	2

#### **Division**

Tables before the division query is executed:

SQL> SELECT * FROM	ANIMAL;					
PETID ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERID
1 Fluffy	 Cat	2	3	4	01-NOV-23	1
2 Rex	Dog	3	1	4	11-MAR-23	2
3 Whiskers	Cat	5	2	5	02-JAN-22	3
4 Buddy	Bunny	4	4	3	14-0CT-20	4
5 Luna	Dog	1	3	1	06-JUN-23	5
6 Domino	Hamster	1	3	1	23-FEB-22	
7 Patch	Dog	2	5	4	07-APR-23	
8 Pirate	Cat	2	4	4	11-MAY-21	
9 Cloudy	Bunny	3	2		11-NOV-23	
10 Smoothie	Bunny	3	2		31-0CT-23	

SQL> SELECT	* FROM ANIMALCARETAK	ER;		
CARETAKERID	CARETAKERNAME	FUNDEVENTID	CARETAKERADDRESS	CARETAKE
1	John Peters	1	123 Main St	12345
2	Mary Johnson	2	456 Elm St	67890
3	David Perks	3	789 Oak St	34567
4	Elaine Brown	4	101 Pine St	87654
5	Michael Wilson	5	234 Maple St	43210
6	Emily Anderson		123 Oak Lane	12345
7	Chris Martinez		789 Pine St	43210
8	Jasmine Walker		101 Maple St	34567
9	Ryan Turner		201 Cedar Drive	43210
10	Morgan Foster		234 Birch Blvd	67890
10 rows sele	ected.			

SQL> SELECT	SQL> SELECT * FROM ADOPTIONDETAILS;				
ADOPTIONID	PETID	ADOPTERID	CARETAKERID	ADOPTIOND	NOTES
1	1		2	20-0CT-23	friendly cat
2	2		2	21-0CT-23	playful dog
3	3	3	3	22-0CT-23	loud cat
4	4	4	2	23-0CT-23	really soft bunny
5	5	5	5	24-0CT-23	quiet dog
6	6	5	2	25-0CT-23	interesting hamster
6 rows sele	ected.				

Division query in the GUI & the result of the query:

DIVISION: Caretakers Facilitating Adoption of Every Animal Type

Submit

**Operation successful** 

#### **Search Results**

Caretaker ID	Caretaker Name	
2	Mary Johnson	